

Listing of Claims

1 1. (Previously Presented) A method for fabricating the shell for an in-the-ear
2 hearing apparatus comprising at least one component or structural feature, comprising:
3 obtaining a digital representation of a portion of the ear canal and/or a portion of the
4 outer ear;
5 creating a digital representation of a shell conforming to the digital representation of the
6 ear canal and the outer ear as applicable, the step of creating a digital representation of a shell
7 comprising creating a digital representation of an outer surface of the shell; and
8 adjusting the fit of the digital representation of the outer surface of the shell in the digital
9 representation of the ear canal.

1 2. (Previously Presented) A method as set forth in claim 1, where the step of
2 creating a digital representation of the shell comprises reducing the number of points in the
3 digital representation of the shell.

1 3. (Previously Presented) A method as set forth in claim 1, where the step of
2 adjusting the fit of the digital representation of the outer surface of the shell comprises
3 expanding, reducing, tapering, or pivoting at least a portion of the digital representation of the
4 shell.

1 4. (Previously Presented) A method as set forth in claim 1, where the step of
2 adjusting the fit of the digital representation of the outer surface of the shell comprises dividing
3 the shell into a plurality of segments and expanding, reducing, tapering, or pivoting one or more
4 of the segments.

1 5. (Previously Presented) A method as set forth in claim 1, where the step of
2 adjusting the fit of the digital representation of the outer surface of the shell comprises
3 compensating for anatomical irregularities in the outer ear or the ear canal.

1 6. (Previously Presented) A method as set forth in claim 1, where the step of
2 adjusting the fit of the digital representation of the outer surface of the shell comprises creating
3 a seamless interface between the shell and a faceplate.

1 7. (Previously Presented) A method as set forth in claim 1, where the step of
2 creating a digital representation of the shell comprises creating a faceplate integral with the
3 shell.

4 8. (Previously Presented) A method as set forth in claim 1, further comprising
5 positioning one or more components or structural features in or on the shell.

1 9. (Previously Presented) A method as set forth in claim 8, further comprising:
2 reducing the volume of the shell incrementally until at least one of the components in
3 the shell collides with another component or the internal wall of the shell; and
4 enlarging the volume of the shell until the collision is alleviated.

1 10. (Previously Presented) A method as set forth in claim 1, further comprising
2 superpositioning the shell in the ear canal and in the outer ear as applicable.

1 11. (Previously Presented) A method as set forth in claim 1, further comprising
2 simulating the insertion of the shell into the outer ear and the ear canal.

1 12. (Previously Presented) A method as set forth in claim 1, further comprising
2 fabricating a hearing instrument by direct manufacture.

1 13. (Previously Presented) A method as set forth in claim 1, further comprising:
2 fabricating a hearing instrument from the digital representation of the shell;
3 fitting the instrument in the user's ear;
4 generating an identical virtual apparatus; and
5 in response to the fitting of the instrument in the user's ear, further modifying at least
6 a portion of the outer surface of the shell of the identical virtual apparatus to adjust the fit,
7 comfort, and/or performance of the apparatus.

1 14. (Previously Presented) A method as set forth in claim 1, further comprising:
2 generating an identical virtual apparatus; and
3 fabricating a hearing instrument.

1 15. (Previously Presented) A method as set forth in claim 1, further comprising
2 applying an identifier to the shell.

1 16. (Withdrawn) A method for optimizing a digital representation of an in-the-ear
2 hearing apparatus comprising a shell and at least one component or structural feature,
3 comprising:

4 modifying at least one physical dimension of at least a portion of the digital
5 representation the shell; and/or

6 modifying the dimensions and/or position of at least one component or
7 structural feature.

1 17. (Previously Presented) An apparatus for fabricating the shell for an
2 in-the-ear hearing instrument comprising at least one component or structural
3 feature, comprising:

4 a scanner for obtaining a digital representation of a portion of the ear canal and
5 optionally a portion of the outer ear; and

6 a processor for creating a digital representation of the shell that conforms to the
7 scanned digital representation of the ear canal and the outer ear as applicable, the processor
8 comprising

9 means for creating a digital representation of the shell; and

10 means for adjusting the fit of the digital representation of the outer surface of the shell
11 in the digital representation of the ear canal.

1 18. (Original) An apparatus as set forth in claim 17, where the processor
2 comprises means for reducing the number of points in the digital representation of the shell.

1 19. (Original) An apparatus as set forth in claim 17, where the processor
2 comprises means for expanding, reducing, tapering, or pivoting at least a portion of the shell.

3 20. (Original) An apparatus as set forth in claim 17, where the means modifying
4 at least one physical dimension of at least a portion of the digital representation of the shell
5 comprises means for dividing the shell into a plurality of segments and expanding, reducing,
6 tapering, or pivoting one or more of the segments.

1 21. (Original) An apparatus as set forth in claim 17, further comprising means
2 for fabricating a hearing instrument by rapid prototyping or direct manufacture.

1 22. (Previously Presented) A method as set forth in claim 1, where the step of
2 adjusting the fit of the outer surface of the digital representation of the shell comprises
3 modifying at least one physical dimension of the digital representation of the outer surface of
4 the shell.

1 23. (Previously Presented) A method as set forth in claim 1, where the step of
2 adjusting the fit of the outer surface of the digital representation of the shell further comprises
3 adjusting the fit of the outer surface of the digital representation of the shell in the digital
4 representation of a portion of the outer ear.

1 24. (Previously Presented) A method as set forth in claim 8, further comprising
2 modifying the dimensions and/or position of at least one component or structural feature.

1 25. (Previously Presented) An apparatus as set forth in claim 17, where the
2 means for adjusting the fit of the outer surface of the shell comprises means for modifying at
3 least one physical dimension of the digital representation of the outer surface of the shell.

1 26. (Previously Presented) An apparatus as set forth in claim 17, where the
2 means for adjusting the fit of the outer surface of the shell further comprises means for
3 adjusting the fit of the outer surface of the digital representation of the shell in the digital
4 representation of a portion of the outer ear.

1 27. (Previously Presented) An apparatus as set forth in claim 17,
2 further comprising means for modifying the dimensions and/or position of at least one
3 component or structural feature.

1 28. (Previously Presented) A method for adjusting a digital representation for
2 fabricating an in-the-ear hearing apparatus, the apparatus comprising a shell, the shell
3 comprising an outer surface, and at least one component or structural feature, comprising:
4 adjusting the fit of the digital representation of the outer surface of the shell in a digital
5 representation of the ear canal and the outer ear as applicable.